

Speech Aids

At right, Joseph A. Resnick, president of Dynamed Audio Inc., Natrona Heights, Pennsylvania is describing the operation of the Resnick Speech Teacher™ he invented. Designed to assist deaf and hearing-impaired persons in achieving better speech, the device provides a visual means of "cueing" the deaf as a speech improvement measure. This is done by electronically processing the subject's speech sounds and comparing them with optimum values, which are displayed for comparison.

For example, many deaf people tend to speak in high-pitched amplitude ranges. Indicator lights on the Speech Teacher's panel responding to the subject's speech are compared with a display representing the desired speech tone and amplitude level. The subject then tries to adjust his speech to match the model. In addition to the desk model, intended for use by clinicians, the Resnick Speech Teacher is also available in a wrist-mounted model (shown in woman's hand), which works in the same fashion but can be worn by the deaf person in everyday social situations.

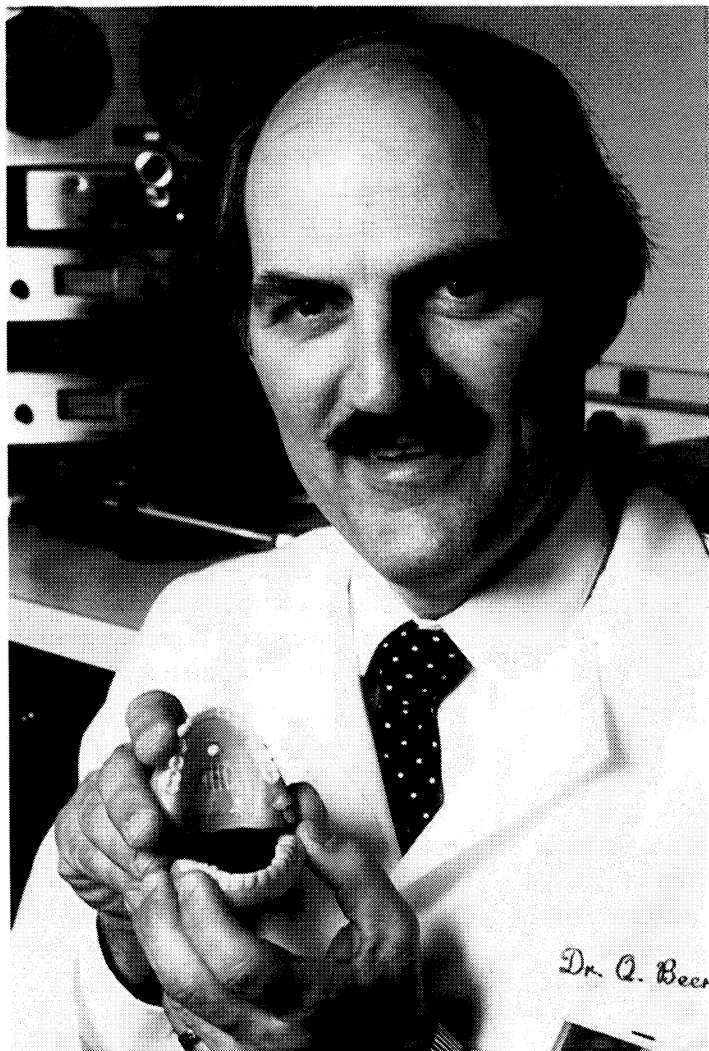


The Speech Teacher is one of several medical related devices invented by Resnick in which a NASA information service played a part. Resnick's "research partner," to use his term, is the NASA Industrial Applications Center (NIAC) at the University of Pittsburgh, one of nine NASA-sponsored dissemination centers that perform computer search and retrieval services for industrial clients. "Before I commit any funds to developing an idea," says Resnick, "I commission a complete technical and field search through NASA at Pitt. On the basis of the information extracted by

NIAC, I then determine whether or not my idea is feasible, and if feasible I commit and put the rest of the gears into play." At right Resnick is shown with his NIAC contact, project manager Robert W. Baird (wearing cap).

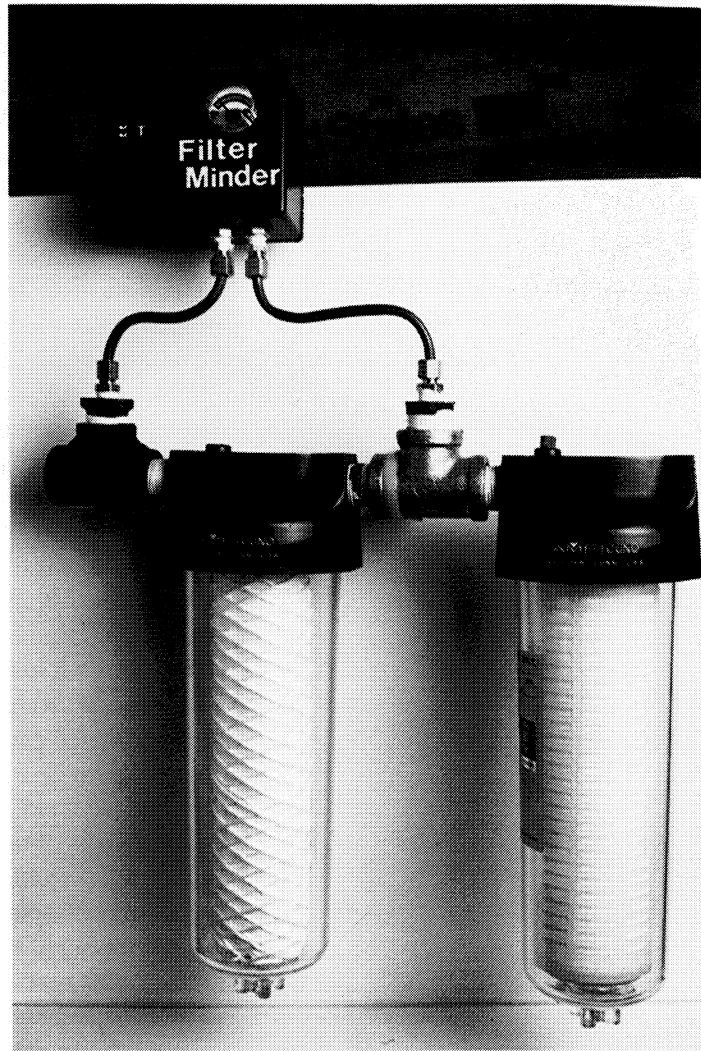
Among other Resnick inventions for which NIAC provided assistance is the Resnick Tone Emitter I™, a miniature electronic device intended for persons who have lost the natural larynx as a result of injury, cancer or other diseases. Built into a denture, the device—like a human voice box—produces a tone which is shaped into words by the tongue, teeth, lips and palates. Some components are so miniaturized they fit like fillings into three or more artificial teeth within a partial or full denture; the emitter is implanted in the den-





ture displayed above by Dr. Quinter Beery, Speech Pathologist and Associate Professor, Department of Otolaryngology at Pittsburgh's Eye and Ear Hospital Center for Audiology and Speech Pathology. Included in the miniaturized system are a microchip, microcircuitry, a power switch, a speaker covered with impervious membrane, an articulator switch and a rechargeable/replaceable battery. Development of the Tone Emitter was aided by a NIAC literature search of several databases that produced a number of pertinent reports relative to other voice prosthesis devices and research.

At right above is a new Resnick invention, introduced to the commercial market early in 1987: an in-home audible water pollution detection and alert system. Designed to fit most standard water lines, the "filter minder" shown monitors purity levels in water filters and sounds an alarm—a squealing tone and a flashing light—when foreign substances are detected. It does not analyze



the substance, simply alerts the homeowner, who can take a sample to a laboratory. The system is produced under license by Polu-Med Technologies, Inc., a Resnick affiliate company located in Minneapolis, Minnesota. Polu-Med has an agreement with Pro-Bac International, Sarasota, Florida, whereby the latter company will have an exclusive manufacturing/distribution license for the monitor.

NIAC's search prior to development of the filter minder turned up nine "citations" of technical reports in such areas as water/wastewater evaluation, detection of bacteria in water,

audio alarms and monitoring systems, including two NASA reports on Langley Research Center's development of a portable water quality monitoring system.

"I have developed a number of technologies," says Resnick, "but had it not been for the accuracy of the information systems of NASA, I doubt seriously whether the devices would have come to fruition." ▲

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